Summary

AbiBow proposes monitoring the daily ratio of bark fired in the boiler incinerating the non-condensable gases (NCG's) to kraft pulp produced. The 30-day rolling average would be used to confirm the actual sulfur capture is more than the 32.5% in the application.

Background

The basis for percent capture/removal calculations in Appendix C of PSD Application (pages C-16 and C-17) is:

- Average bark fired in 2009 (lowest level in past 5-years)
- Maximum sulfur from NCG incineration at maximum pulp production (~88% of sulfur input)
- Maximum sulfur from tire-derived fuel combustion (~ 10% of sulfur input)
- Average No. 6 oil fired in 2009 (~2% of sulfur input, oil is generally not co-fired with bark)

Since 88% of the sulfur input is from the pulp mill NCG's, monitoring the ratio of bark firing to pulp production is uncomplicated and represents most of the sulfur into the boilers. This is especially true since the PSD application also assumed the maximum TDF was co-fired with the bark in each boiler, which is a conservative overestimate since the TDF is actually split between both boilers.

Both combination boilers had nearly identical sulfur input during 2009. However, the No. 1 combination boiler has the lower percent sulfur capture/removal (32.5%) because it fires less wood than the No. 2 combination boiler. In 2009, the annual bark fired in the No. 1 combination boiler was 197,519 tons. Dividing by the maximum annual pulp production of 666,125 tons of pulp, the bark/pulp ratio resulting in the minimum 32.5% sulfur removal was 197,519/666,125 or 0.2965.

The 2009 sulfur input was nearly identical for the No. 2 combination boiler. Although more bark was burned and the sulfur capture/removal was actually higher (37.9%), the same bark/pulp ratio of 0.2965 would also represent the minimum 32.5% sulfur removal from the No. 2 combination boiler.

The pulp mill NCG's may be incinerated in either combination boiler. The NCG incineration can be switched whenever necessary and may switch boilers several times during the month.

Proposed Monitoring, Recordkeeping, and Reporting

For each operating day, the owner/operator shall monitor and record the NCG incineration location, the daily bark fired in each combination boiler, and the daily kraft pulp production. For each operating day, the owner/operator shall calculate the daily bark/pulp ratio by dividing the daily bark fired in the combination boiler incinerating NCG's by the daily kraft pulp production. For each operating day, the owner/operator shall calculate the 30-day rolling average bark/pulp ratio, excluding any operating days when the kraft pulp mill is down (zero production in the denominator). For each operating day when the NCG's are switched between combination boilers, the owner/operator shall also monitor and record the hourly bark fired in each combination boiler. For each operating day when the NCG's are switched between combination boilers, the owner/operator shall calculate the daily bark/pulp ratio by summing

the bark fired in the combination boiler incinerating NCG's for each hour in the operating day and dividing the total daily bark fired by the combination boilers while incinerating NCG's by the daily kraft pulp production. These records shall be maintained on-site for a period of at least five (5) years and made available to Department personnel upon request. The owner/operator shall report each period when the 30-day rolling average bark/pulp ratio falls below 0.2965 in the Title V semi-annual compliance report, along with the reason for each excursion and corrective actions taken. If no excursions occur during the semi-annual reporting period, the report shall state such.